IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Canceled)

2. (Currently Amended) ~~The special effect device according to claim 1 wherein,~~ A special effect device in which picture signals are read out from a frame buffer based on an address signal to impart a desired special effect to the picture signals read out from said frame buffer, said special effect device comprising:

address signal generating means for generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point along a plane parallel to said first virtual plane, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc about said optional position as center so as to disappear to outside a display area,

wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating means generates a

readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$\begin{aligned} R &= f_1(r) \\ \Theta &= \theta \end{aligned} \tag{1-3}$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \tag{1-5}$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$\begin{aligned} R &= f_2(r) \\ \Theta &= \theta \end{aligned} \tag{1-4}$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \tag{1-6}$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \qquad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \qquad (1\text{-}10)$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

3. (Currently Amended) An address signal generating device for generating an address signal for reading out picture signals from a frame buffer, comprising:

address signal generating means for generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional

position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point along a plane parallel to said first virtual plane, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating means converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating means generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}}\right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \qquad (1\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \qquad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \qquad (1\text{-}10)$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

4. (Currently Amended) An address signal generating method for generating an address signal for reading out picture signals from a frame buffer, comprising:

an address signal generating step of generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point along a plane parallel to said first virtual plane, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating step converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said

address signal generating step generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \qquad (1\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \quad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \quad (1\text{-}10)$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

5. (Currently Amended) An address signal generating program stored on a computer readable medium for having a computer execute a process of generating an address signal for reading out picture signals from a frame buffer, said process comprising:

an address signal generating process of generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture corresponding to said picture signals stored in said frame buffer as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point along a plane parallel to said first virtual plane, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating process converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating process generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}}\right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \qquad (1\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \qquad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \qquad (1\text{-}10)$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

6. (Currently Amended) A special effect device in which picture signals are read out from a frame buffer based on an address signal to impart a desired special effect to the picture signals read out from said frame buffer, said special effect device comprising:

address signal generating means for generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point as if said picture corresponding to said rupture point is rolled along the other arc, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating means converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating means generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r)=\begin{cases}\text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}}\right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r)\end{cases} \quad \text{(1-6)}$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \quad \text{(1-9)}$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \quad \text{(1-10)}$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

7. (Currently Amended) ~~The special effect device according to claim 1 wherein,~~ A special effect device in which picture signals are read out from a frame buffer based on an address signal to impart a desired special effect to the picture signals read out from said frame buffer, said special effect device comprising:

address signal generating means for generating a readout address signal for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point along a plane parallel to said first virtual plane, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc about said optional position as center so as to disappear to outside a display area,

wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating means generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals, in an area in which the picture to be flipped and moved is output, by the equation (2-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (2\text{-}3)$$

which satisfies the equation (2-5):

$$f_1(r)=\begin{cases}\text{Max} & (0\le r<t_r-\text{radius})\\ t_r-\text{radius}\times\left(\pi+\arcsin\left(\dfrac{t_r-r}{\text{radius}}\right)\right) & (t_r-\text{radius}\le r<t_r)\\ t_r-\text{radius}\times\left(\pi-\arcsin\left(\dfrac{t_r-r}{\text{radius}}\right)\right) & (t_r\le r)\end{cases} \quad (2\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (2-4):

$$\begin{aligned}R&=f_2(r)\\ \Theta&=\theta\end{aligned} \quad (2\text{-}4)$$

which satisfies the equation (2-6):

$$f_2(r)=\begin{cases}\text{Max} & (0\le r<t_r-\text{radius})\\ t_r-\text{radius}\times\arcsin\left(\dfrac{t_r-r}{\text{radius}}\right) & (t_r-\text{radius}\le r<t_r)\\ r & (t_r\le r)\end{cases} \quad (2\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (2-7):

$$X0 = R \cos\Theta$$
$$Y0 = R \sin\Theta \quad (2\text{-}7)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (2-8):

$$X = X0 + cx$$
$$Y = Y0 + cy \quad (2\text{-}8)$$

provided that, in the equations (2-5) and (2-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

8. (Currently Amended) An address signal generating device for generating an address signal from a frame buffer, said special effect device comprising:

address signal generating means for generating readout address signals for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer. as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a

height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point as if said picture corresponding to said rupture point is rolled along the other arc, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating means converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating means generates a readout address signal (R, Θ) from address signal (r, 0) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta$$

(1-4)

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}}\right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases}$$

(1-6)

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta$$

(1-9)

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy$$

(1-10)

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

9. (Currently Amended) An address signal generating method for generating an address signal from a frame buffer, said special effect method comprising:

an address signal generating step of generating readout address signals for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point as if said picture corresponding to said rupture point is rolled along the other arc, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating step converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating step generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}} \right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \qquad (1\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \quad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy \quad (1\text{-}10)$$

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

10. (Currently Amended) An address signal generating program stored on a computer readable medium for having a computer execute a process of generating an address signal for reading out picture signals from a frame buffer, said process comprising:

an address signal generating step of generating readout address signals for said picture signals stored in said frame buffer so that, by flipping a picture, ruptured with an optional position of a picture, corresponding to said picture signals stored in said frame buffer, as a rupture point, for extending along a curve formed by an arc of a circle of a radius of an optional

size, defined on a second virtual plane perpendicular to a first virtual plane to which belongs said picture, and by moving, after said picture corresponding to said rupture point has reached a height of the diameter of the circle on said second virtual plane, said picture corresponding to said rupture point as if said picture corresponding to said rupture point is rolled along the other arc, such a special effect will be obtained in which the picture on said first virtual plane is peeled off sequentially radially along said arc, about said optional position as center, so as to disappear to outside a display area,

~~wherein said address signal generating step converts a rectangular coordinate system of said picture signals to a polar coordinate system~~ wherein with said radius of the optional size of said circle as radius and the amount of movement of said picture as trans, said address signal generating step generates a readout address signal (R, Θ) from address signal (r, θ) of an overside of the picture on the polar coordinate system of said picture signals in an area in which the picture to be flipped and moved is output, by the equation (1-3):

$$R = f_1(r)$$
$$\Theta = \theta \qquad (1\text{-}3)$$

which satisfies the equation (1-5):

$$f_1(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \left(\pi + \arcsin\left(\frac{t_r - r}{\text{radius}} \right) \right) & (t_r - \text{radius} \le r < t_r) \\ 2 \times t_r - \text{radius} \times \pi - r & (t_r \le r) \end{cases} \qquad (1\text{-}5)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

a readout address (R, Θ) on the polar coordinate system of said picture signals in an area for outputting an unflipped picture portion is generated by the equation (1-4):

$$R = f_2(r)$$
$$\Theta = \theta \qquad (1\text{-}4)$$

which satisfies the equation (1-6):

$$f_2(r) = \begin{cases} \text{Max} & (0 \le r < t_r - \text{radius}) \\ t_r - \text{radius} \times \arcsin\left(\dfrac{t_r - r}{\text{radius}}\right) & (t_r - \text{radius} \le r < t_r) \\ r & (t_r \le r) \end{cases} \qquad (1\text{-}6)$$

where

t_r = trans×(radius + maximum value of the distance from the center to each apex point of the picture)

radius = fixRadius×picture height;

the readout address signal (R, Θ) on the polar coordinate system is transformed by the equation (1-9):

$$X0 = R\cos\Theta$$
$$Y0 = R\sin\Theta \qquad (1\text{-}9)$$

to generate the readout address signal (X0, Y0) on the rectangular coordinate system; and wherein

a readout address signal (X, Y) in case said optional position on the rectangular coordinate system of said picture signals is (cx, cy) is generated by the equation (1-10):

$$X = X0 + cx$$
$$Y = Y0 + cy$$

(1-10)

provided that, in the equations (1-5) and (1-6), Max indicates the generation of the readout address signal for reading out a signal other than the picture signals stored in said frame buffer.

11-15. (Canceled)